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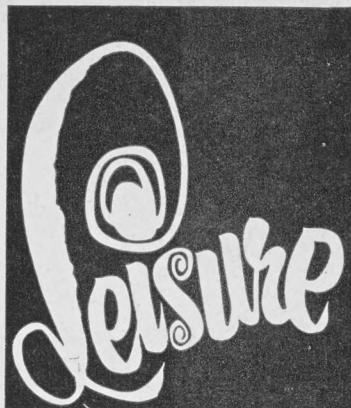
RECREATION AND CULTURAL DEVELOPMENT MAGAZINE

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The thrilling sport of parachute
jumping is recreation for some.

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A Nation's Builders

Not gold, but only men can make
A people great and strong—

Men, who, for truth and honor's sake,
Stand fast and suffer long,

Brave men, who work while others
Who dare while others fly—

They build a nation's pillars deep
And lift them to the sky.

—Ralph Waldo Emerson

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THE WISE USE OF LEISURE

by

Professor Charles K. Brightbill

**Head Department of Recreation and
Municipal Park Administration**

IF WE are going to carry out a plan for the wise use of leisure, it seems essential to understand what we mean when we say, "wise." When I use it I mean using leisure in a sound rather than foolish way, in a manner, which our knowledge, experience and understanding lead us to believe, will contribute to the growth rather than the disintegration of personality.

This "implementation" symphony will have to open with "change of heart" on values and attitudes. This means the soft pedal on complacency, selfishness and social myopia, and double forte on involvement, generosity and willingness to face reality of a cybernated world. Whether the

score turns out to be a harmonious and lasting work will depend on the value we give to the notes which usually get pushed out of the way by the noise and bustle of everyday living. But it's one thing to compose a work and another to play it. We can compose it, and perhaps help orchestrate it, but the test is in the playing. And this must be done by the players — the people and their institutions.

Schools and families should encourage children to develop interests, appreciation and leisure skills as early as possible. Mozart composed at four. Edison invented at nine. Helen Hayes was in footlights before she was in school. Antonio Stradivari fashioned violins at twelve. The

play world of the child is a fine laboratory for discovering aptitudes and sharpening appetites.

It is not enough to talk to young minds. They must have the experience of catching a minnow, growing a garden, or painting a picture. Youth should be encouraged to study and and read Shakespeare but also to act and live the dramas of the Bard. William James told us that each stimulation demands a motor outlet. Let the young translate what they learn into action.

Experiences beyond the classroom are necessary. The classroom fails to provide both the exercise and the direction of the deep-rooted passions which control our behavior — love, hate, joy, sorrow, fear, anger. Seldom do classrooms give young people a chance to express the emotions involving risk, rivalry, adventure, sacrifice, loyalty, etc. These must come with motion and experience.

Unfortunately, in too many instances, the schools are still educating largely for work, even though the real threat of moral decay is centered not in the hours we spend earning our bread. True, the cardinal principles of education do include education for leisure, but too many educators give lip service only. Some educators think that the best way to educate for leisure is to continue doing what they have been doing for a couple of hundred years, assuming, perhaps, that the world changes but that education does not.

If the schools are going to do a better job teaching the arts of leisure, they will have to drop their traditional



policy of isolating opportunities for recreation on the island of extra-curricular activities and bring them into the mainland of the school curriculum itself. Is there any reason why mathematics, chemistry and language need to be dull, dry, distasteful, or completely disassociated from those things in life which move us emotionally? Cannot these subjects be brought in closer contact with our living experiences? Must botany concern itself only with cell structure? Can it not also be taught in a manner that would help students know and enjoy plant life in the out-of-doors? Do we believe with Mr. Dooley that it doesn't matter what you teach a boy so long as it is distasteful to him?

Education for leisure is simply education for living, particularly in a leisure centered society. This means, then, that the responsibility for educating for leisure cannot be the exclusive domain of any one segment or level of education. It belongs just as much to the kindergarten teacher as it does to the high school instructor or to the college professor. It belongs just as much to chemistry and physics and mathematics as it does to physical education and music and drama. If our young people are exposed to academic subjects with the idea that they are merely going through these things because they must, and that the sooner they finish them the better, what happens to the appetite for more learning under such conditions? Where are the carry-over values? Zest for learning and creative thinking cannot be directed. They have to be inspired. It is only through creative thinking born of sustained

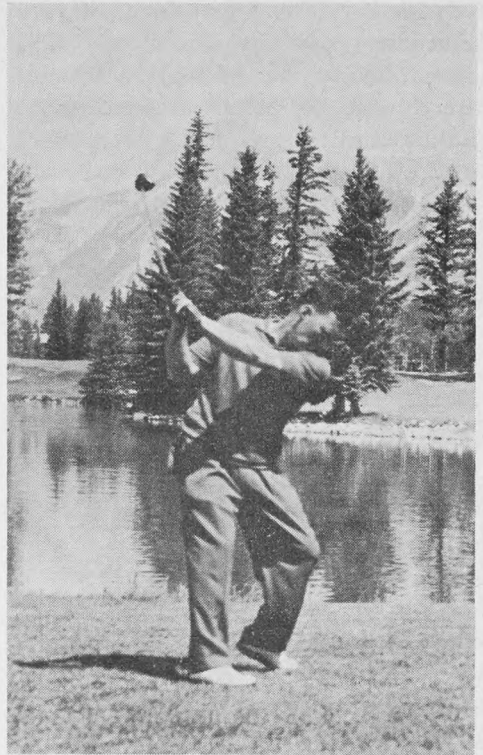
interest that we can go beyond "what is" to "what may be."

Education for leisure doesn't de-emphasize liberal education or the need for it. It accents it. But we may have to view liberal education a bit differently, particularly with respect to making choices. If people are going to make wise use of their leisure, they will have to choose but they will also have to make the right choices in the best interests of society and themselves. They will have to be motivated to want decency and wholesomeness and goodness. They will have to have convictions, the right convictions, and the desire and the courage to carry them through. But even if liberal education achieves everything it purports to accomplish, it will not be enough! There will always be a large number of people who, because of a lack of interest or capacity for liberal learning, may have to work with their hands and their legs and their backs. These people will have to find other avenues of developing interests and skills for wise use of their spare time. For them, the informal world of recreation, rather than the formal world of classroom education, may have to be the ever-flowing source of personal involvement and satisfaction.

Assuming that education for leisure is education for living, perhaps we can turn to Plato, for help. Plato said that "human behavior flows from three main sources, desire, emotion, and knowledge," and that "Utopia begins in the body of man". With this as a point of departure, he believed that we might best educate our youth for "living" by: (1) exposing him early

and long to games, athletics, and the gymnasium; then, (2) giving him music for the gentle nature (the soul will learn harmony, rhythm, and even a disposition to justice), (3) leading him then into mathematics, history and science—but not by compulsion, (4) then adding the religious aspects for inspiration, hope, devotion and sacrifice; (5) then moving along to philosophy and the world of ideas, and (6) finally, testing his learnings in real life situations.

Turning to another consideration, there is much to be said for "excellence" and I don't want to disparage it. But if the goal is to enrich the common culture and hence, the nobility of the individual, we have to be careful about what we so glibly refer to as the "frills" of education. To me, such things as learning how to enjoy a poem, learning how to move our bodies with grace and satisfaction, are not frills. I do not subscribe to the idea that these things should be set aside in favor of seeing who can be the first admitted to MIT. The current, national, parental neurosis which tends to identify the true purpose of education with grade getting, with worshipping the top performer, can in itself be a deterrent to multiplying the opportunities for more widespread abundant living. Moreover, it sometimes has the tendency to accelerate the "growing up" process at the very time that youngsters ought to have the time to discover themselves. There are no major or minor sports in the world of leisure and there are no gold medals for sterling performances, or sterling medals for golden performances.



One of the first things we need to do in implementing a program for the wise use of leisure is to try to convince people that the satisfying and full life in leisure need not be equated, necessarily, with the amount of goods and gadgets they possess.

Also, let the drive be for the needs and interests of man be placed ahead of the convenience of the machine. In the cities, the campaign should be for air, light and space before accommodations for the automobile. The motor car is wiping out the city as the express-way is wiping out the country.

P. Sorokin in *Sociocultural Causes*

lity, Space, Time reminds us of the difference between slack time and sociocultural time. The first is continuous and the latter, discontinuous. Social activities are often interspersed with pauses. This causes difficulty in people using their leisure well, or together, at least. Some blocks of time permit doing many things, others few.

According to Edwin Blakelock in his *New Look at the New Leisure*, a study of refinery workers indicated that a decrease in the number of work hours does not necessarily mean that time left over is available automatically for personal fulfillment. If a man who comes off his shift at midnight wants to go to the library or to the bowling lanes, these facilities may not be open. Let's make the desirable resources available at the right time.

Also, where feasible, why not allow workers to work a longer work week and then give them longer vacations? Usually, there isn't enough time, any how, on weekends, except to increase highway accidents. Let's extend the summer vacation, or give the worker a summer and a winter vacation.

Schools and colleges could also schedule classes on the first three or four days of the week, thereby allowing the remainder of the time for the student to get in the habit of "having time" and using his leisure for his own self-fulfillment. In this way, he'd have some time to "lose" himself in good books rather than being pressed just to read "so many pages", as assignments.

We ought to urge people to avoid letting their work concepts infiltrate

their leisure—to do battle against their working, trading, speculating and playing compulsively in their leisure. The doctors should drive this point home to health-conscious Americans and the physicians might well start with themselves.

George Friedman reminds us that we are not too well prepared for leisure, pointing out that in the pre-machine era the feast days were rich in emotional substance. There were religious rites, social taboos were relaxed and the folk arts were manifested. Perhaps we need leisure occasions of more substance! Perhaps we need new kinds of spiritual festivals, or brotherhood festivals, or do-something, "learn-something", "give-something" festivals.

If we are going to encourage the wise use of leisure, that is stimulate in certain kinds of appreciations, interests and skills, it may help to be specific. I suggest that we promote skills:

- that help give us a strong spiritual base
- that sharpen our abilities to communicate effectively and reflect the social graces
- that aid body development, movement and motor co-ordination
- that contribute to safety and survival (e.g.)
- that make use of the creative hands, as in the graphic and plastic arts.
- that take us deeply into literature
- that bring us closer to the natural environment

- that create music, or at least make it possible for us to enjoy it
- that provide the opportunity for expression through drama in a variety of forms
- that open the doors of the scientific world and those
- that encourage us to be of service to others.

An essential early step in implementing a campaign for the wise use of leisure is to re-orient the professions which have the most direct contact with the world of leisure, and whose counsel is likely to be heeded. Among the former are the recreation and teaching professions, among the latter, the medical and ministerial professions.

These in the recreation profession should be oriented (a) to the view that it is not the activity which is important in leisure, but rather what happens to people as a result of their recreative experiences, (b) to the view that self-determination, self-fulfillment and self-growth of the individual in his leisure is the paramount goal and (c) to the idea that the emphasis should be on "opportunity for the wise use of leisure", including the chance for relaxation, solitude and privacy, as well as the opportunity for action, creativeness and group association.

The teaching profession must be oriented to the view (a) that it is becoming more directly responsible for the use of leisure than for vocational training and education for leisure is a primary and not a secondary responsibility of theirs, (b) that the

range of leisure education is as wide as the scope of education, generally, (c) that schools as cultural institutions do not stand alone, but rather with the habits, values and behavior of the society they serve (d) that the most important subject of education should be man—not powerful, affluent, possessive man, but resourceful, selfless creative man—and with leisure, recreative man, and (e) that the real test of the school will be its capacity to help the individual prepare not for a work-centered existence (with educational progress measured mainly in terms of the amount of pre-determined formal knowledge he can cover in a given period of time) but rather for a leisure-centered life to which he will eventually have to give himself up emotionally and intellectually.

The doctors will have to be oriented to being something more than casual when they counsel their patients about the importance of the wise use of leisure to sound emotional and physical health. Similarly, the churchmen need to be made more aware of the denominators of human purpose which are common to religion and recreation.

Finally, the implementation of a program for the wise use of leisure should be spearheaded by the establishment of a public policy on leisure and public recreation at all levels of government. This policy should identify the problems, establish official, public, position on objectives and approaches, lay claim to fiscal support from public and user funds, set forth a long range plan of action and involve public participation in its stewardship and accomplishment.

CASTING

A BUST

Sculpture Part III

by Harry Wohlfarth

Harry Wohlfarth, A.S.A., B.B.K., is Assistant Professor of Art, Extension Department, University of Alberta at Edmonton. He has a distinguished record of teaching in Canada and abroad. He has been with the Department of Extension at the University and at the Banff School of Fine Arts since 1954.

Mold preparation for casting

In "Leisure" No. 1, 1964 the modeling of the portrait bust in clay over an armature was described with all pertinent detail. "Leisure" No. 2, 1964 featured the technical procedures of mold making.

We will now proceed with the final step in our endeavor. As the reader will recall, our Plaster mold is at present resting upside down in a box of sand wedged in on all sides with crumpled newspaper, and the clay still inside the "one piece mold" including the armature. We pull therefore strongly but gently the base board with the iron rod armature out of the clay core. The Butterfly usually rips off and remains in the clay, where it will be dug out later on.

A two or more piece mold would be opened in the following manner: with our plaster knife we carve down the excess plaster at the seams of a clay strip separation mold until the seams of separation between front and back molds can be clearly seen. In the case of shims used for separation, the seams cannot be missed. Using the plaster knife and a chisel we pry gently into the seam. A little water, slowly poured down along the seam-line will help to open it up. Tapping the wooden base board with a hammer will also loosen your mold.

Since we have a one piece mold we have of necessity to dig all our clay out of the mold, using a stainless steel table spoon and working carefully down the back of the head. As soon as we have come to within $\frac{1}{2}$ an inch of the plaster mold, we try to loosen the remaining clay with our fingers or with a lump of soft clay to pull it away from the mold and take it out. We have to be careful, not to nick the mold with the spoon, which also is the reason for digging down the back of the head first. As soon as we are down to the crown of the head we pull away the side slabs of clay around both ears and by that time the whole front of the face should come off quite easily by gently pulling. Next we use a round hand mirror inside the mold to check for rests of clay in some less accessible hollows like the tip of the nose. Check the eyes, ears, if there are any, and chin. We wash our mold with a lightly turned on garden hose. After pouring all water completely from the mold, this mold is left to dry, which in our climate and in the summer does not take too long.

In order to assure good separation of mold and cement core, the mold needs a separator. In the case of plaster molds, liquid soap, oil or shellac can be used. We use the metal front end of a round brush, dip it in shellac and brush carefully all over the inside of our mold. This is repeated twice more, the inside again checked with the hand mirror, any excess shellac removed and the mold is now left to dry for one day.

Cement casting

Materials for casting:

- 1 wooden box 20" x 36" x 20"
- 1 one quart tin can for measuring cement and sand
- 1 trowel
- 1 wooden stick 1" x 1" x 36" padded with a cloth on one end for pounding the cement into the mold.
- 1 reinforcement iron, strait cement mixture or ready mixed mortar in bag.
- Water
- 1 hammer
- 1 chisel (1" blade)

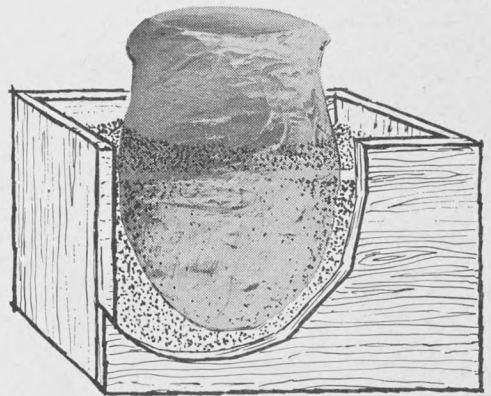


Figure 1

The shellacked plaster mold is resting upsidedown in a sand filled box, ready to receive the cement (fig 1). With the tin can measure the following dry ingredients into the wooden mixing box:

- 1 part grey portland cement
- 1 part white Medusa Cement
- 4 parts clean, sharp sand
- 1 part marble or stone dust.

These dry components are now mixed with the trowel very thoroughly. We mix enough for the whole mold. Water is carefully added until the mixture looks like an oozy mud pie. We have to be very careful, that the mixture does not become too liquid. It is best to hold the cement mixture a little on the dry side.

The mix is now layed into the mold and pounded gently with our round ended and padded stick. It is important to fill and pound constantly in order to avoid air bubbles and seams all round the face or neck. As soon as the mold is filled we gently run the iron reinforcement rod down the middle avoiding touching the plaster mold at the crown.

We put a piece of plastic over the cement and cover the mold and box with old cloths or an old kapoc mattress; this again is covered with a sheet of plastic. Thus we assure an even temperature for curing. Curing

time in the mold varies from one to two weeks. After two weeks the cast can be surface carved and filed like a piece of stone. Cement casters claim that the piece will harden for seven years after it is cast and then will have all the qualities of a fine stone.

Removing the waste mold

Two weeks have passed and the cement is now cured. We lift the filled mold out of the sand box and put it upright on top of a sturdy box 36" high.

With hammer and chisel we cut first through to the burlap strips and remove them. Next we chisel out the coathanger reinforcements and take them off the mold (fig. 2) With these obstacles cleared out of our way we proceed in chipping carefully down along the back of the head, removing the plaster in little chunks, always having the straight side of the chisel facing away from the piece (see fig. 3).

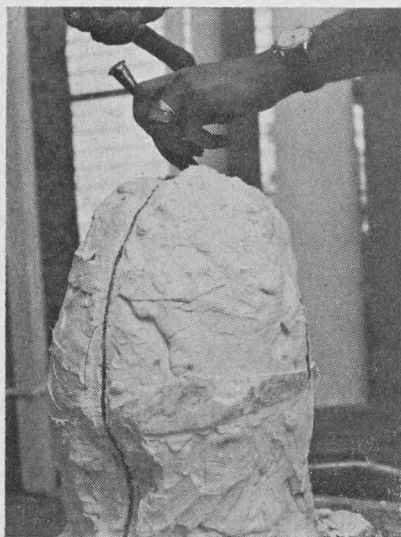


Figure 2

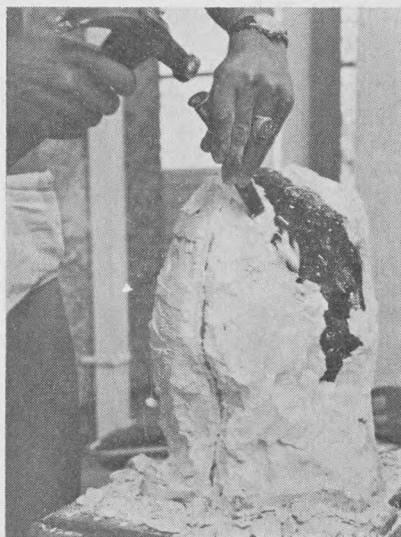


Figure 3



Figure 4

After the back of the head has been laid bare we remove the mold from the face starting on the top of the head, working down. Extra caution has to be exerted around the eyes, nose ears and lips.

Finally our cement cast has been freed of the plaster mold and we can see the fruits of all our labor. This



Figure 5

is either a moment of immense satisfaction, as in the case of a successful cast, or a moment of disappointment if a large air bubble has formed at an undesirable spot or if cracks have developed. Should this be the case, it can be patched with cement, but we have to make certain, that the piece is thoroughly wetted with water before it is patched up. In our case however, the cast was a success as can be seen by comparing the clay model (fig. 5) with the finished cement cast (fig. 6).



Figure 6

Cement casts should always be left in their natural color. There are however liquid marbles and artificial stone formulas which can be used instead of the regular cement.

(Formula 1) Liquid Marble from Portland Cement

White Portland cement 10 quarts
 "Keene's" regular cement 10 quarts
 flour silica 5 quarts
 Hydrated lime 1 quart

Process: Mix dry ingredients very thoroughly. Place water of between 60 to 70 degrees F. into container. Sift dry mixture slowly into water, allowing dry mixture to dampen and settle down. Stir until a pile has arisen considerably above water. Let all stand for **10 minutes**. Stir well from the bottom without to mix in air. The mixture should be of a smooth pouring consistency. Let stand for a half hour before pouring into mold.

(Formula 2) Artificial Marble

The only formula for making artificial marble as now used the world over is made from the calcised magnesite and magnesium chloride process. This method, originally patented has now expired and can be used by anyone having the knowledge.

Magnesite: A form of limestone which has been calcised (reduced to a powder by heat) to eliminate the carbonic acid gas, allowing it to remain in a white powdered condition until mixed with the magnesium chloride solution and a filler (Marble dust, talc) when it again assumes **the condition of stone**.

Magnesium Chloride (fused): Looks like small pieces of ice, if properly kept and free from air it will remain in this condition a long time. If exposed too long to air it will dissolve or melt. When in a liquid condition it can still be used, but should be well covered.

Mixing Magnesium Chloride: dissolve small pieces of magnesium chloride completely in cold water,

using a glass jar. Put into the solution a Beaume Hydrometer (alkali tester) which looks like a thermometer without board and reading from 0 to 50. In clear water the hydrometer will sink to the bottom but as density of the water becomes more compact by the addition of the chloride, the hydrometer raises and when it reaches 25, it is of the proper density for mixing with the magnesite and the filler. If it registers less than 25, add more chloride, if more than 25 add water. **Epsom salts** (magnesium sulphate) mix in water similar to above, test to 15 deg. Beaume.

Marble mixture

Magnesite	10 pounds
Marbledust	4 pounds
Talc	1 pound

Mix all dry material thoroughly before applying liquid solution. Mix with a liquid solution of:

Magnesium-Chloride, 10 parts tested to density of 25: epsom salts (magnesium sulphate) 1 part tested to density of 15. Mix to consistency of very thick buckwheat batter, by adding the solution gradually to dry material.

This mixture produces a clean white artificial marble. If colored marble is desired, pure mineral pigments in powdered form or earth colors have to be used. The pigment is always mixed with the magnesium Chloride solution. It has to be borne in mind that the color will be several shades lighter in the dry state than wet. In

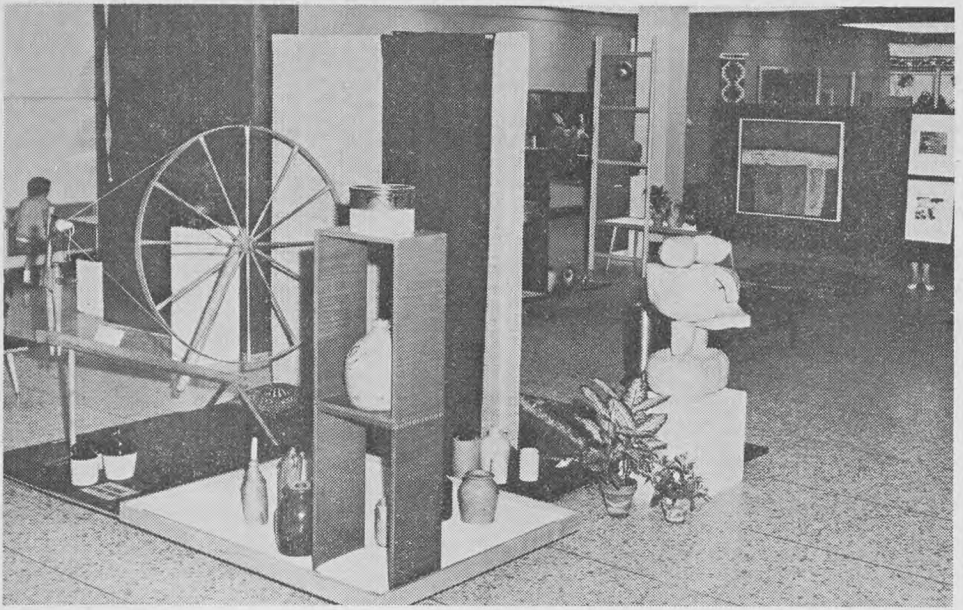
order to utilize left over marble mixture it is advisable to have a slab of glass ready, lightly oiled on to which the surplus marble can be poured. This marble slab can be broken into small pieces after it is dry and used for mosaic.

Formula (3) Artificial Granite

Lime, 100 parts, fine quartz sand 120-180 parts, coarse sand 180-250 parts, sodium silicate (42° Beaume) 35 parts, add mineral colors, and mix them with the lime.

"There is this difference between the two temporal blessings—health and money; money is the most envied, but the least enjoyed; health is the most enjoyed, but the least envied; and this superiority of the latter is still more obvious when we reflect that the poorest man would not part with health for money, but that the richest would gladly part with all his money for health."

Charles Caleb Colton, 1780-1832



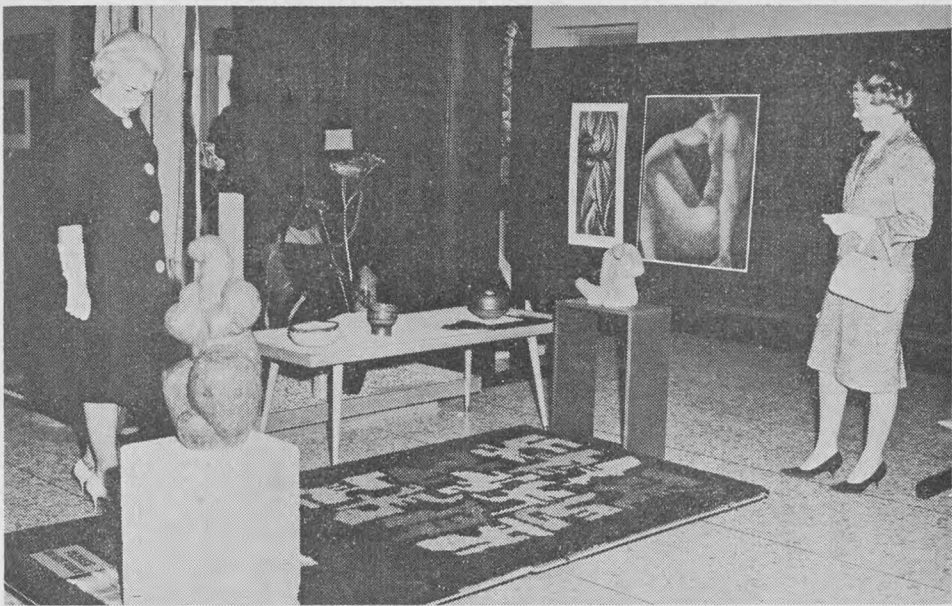
ALBERTACRAFT

A RECORD number of entries, and record attendance, were highlights of the Albertacraft '64 exhibition of arts and crafts which was held at the Northern Alberta Jubilee Auditorium in Edmonton, June 15 to 22, 1964.

This was the ninth year for this provincial and national exhibition of arts and crafts, sponsored by the Government of Alberta to encourage local talent and provide means of exchanging ideas and techniques with artists and craftsmen of many communities and other provinces. The overall quality of work submitted for Albertacraft exhibits has attained a very high standard, with the result that the exhibition has become an event of major interest in Western Canada craft circles.

More than 1,500 items were on display, including many fine examples of painting, ceramics, sculpture, basketry, photography, metal work,





batik, weaving and millinery. Particularly interesting were exhibits submitted by the Winnifred Stewart School for Retarded Children, and the Charles Camsell Hospital. The latter included a number of Eskimo carvings.

In addition to the contemporary arts and crafts exhibits, collections of Indian basketry, American ceramics, early Canadian pottery, and weaving from many parts of the world were displayed.

Movies of various aspects of handicrafts, folk singing, and live demonstrations of weaving, ceramics and basketry were presented daily.

Officiating at the opening ceremonies for Albertacraft '64, Hon. A. Holowach, Provincial Secretary, stated:- "This exhibit presents a fascinating tableau of the many talents around us. During the period of its existence 'Albertacraft' has, in a successful fashion, provided enjoyment

to the public and encouragement to a spirited group of participants." Referring to the necessity of the visual and performing arts Mr. Holowach stated:- "In the years ahead, as more leisure times becomes available to our people, worth while cultural activities should be the ultimate goal of our society. Canada has always been the land of opportunity and our young nation has the talent, the aspirations and the resources necessary to create a distinctive culture. A great experiment awaits Canadians in this field."

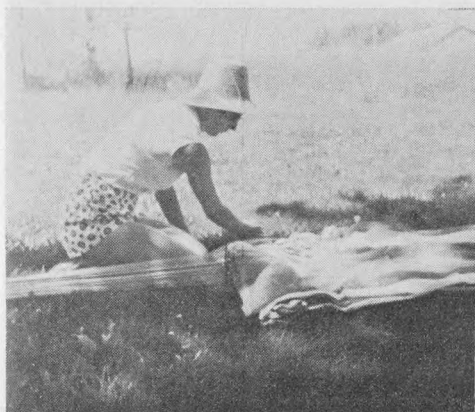
Mr. Walter Kaasa, Director of Recreation and Cultural Development Branch, announced the awarding of \$4,000 in scholarships to Albertans engaged in visual arts and handicrafts. A record \$2,500 was awarded to fourteen Alberta artists, while \$1,500 was shared by two community craft centres and seven individuals for their work in handicrafts.

SKY DIVING!



by Jean Knott

IT'S a far cry from thoracic surgery to sky-diving, but the transition from one to the other comes easily for Dr. Colin Ross of Edmonton, one of the city's leading surgeons, who is one of the founding members of the Parachute Club of Edmonton and



Club secretary Joyce Matthews packs her chute in preparation for another jump.

president of the Parachute Clubs of Canada. Dr. Ross says, "Nothing is more thrilling, or more relaxing, than the sensation of free fall. You just seem to soar, like a bird. There is no sensation of falling, or speed—it's almost indescribable".

Like many parachutists, Dr. Ross first experienced parachuting while a member of the armed forces, when he served as a medical officer with the Canadian Parachute Corps during World War II. After demobilization he remained in England to complete his post-graduate work, returning to Canada in 1955. He immediately joined the R.C.A.F. Medical Reserve, and finally became a member of the Para-Rescue Squadron. He attended the Para-Rescue School at Jasper, and is still active in this work. Weekends and occasional days off (all too few in the busy life of a doctor) find him heading his small station wagon (back seat loaded to the roof with helmet, jump boots, suit, parachutes, instruments) for the Cooking Lake Airport, where the planes used by the Edmonton club take off and

land. Here, to use his own words, Dr. Ross "sheds all the worries and troubles for a few hours".

Until a relatively few years ago, parachute jumping was solely a military technique, used increasingly during and since World War II as a means of transporting men and equipment to a given spot in a minimum length of time. Sport parachuting has been popular in Europe for a number of years, and was introduced in North America in 1955 by Jacques Istel of France. It caught on quickly in Canada, with the Edmonton club one of the first three to be organized, in 1957. Original members of the club were Jack Austad of the R.C.A.F. Para-Rescue Team, Sgt. Wilf Johnsr of the P.P.C.L.I., Ted George, a chartered accountant, and Dr. Ross.

Armed only with the barest minimum of equipment, and knowledge gained chiefly through the Armed Forces, the group found it uphill going for the first three years. So little was known about the sport that their knowledge had to be gained by trial



Safety is important, and here Dr. Ross is checking out Dr. Genzer's equipment.

and error. The first parachutes they used were standard military chutes, and one of the first physical difficulties was found to be the shock of the sudden opening of the chute with the body falling at a velocity of 125 miles per hour. Other persons joined the club, but dropped out one by one, until there were again only five who maintained their interest and activity in the club. Their persistence paid off, however, about three years ago, when suddenly interest in sky-diving was aroused, and within a short time membership in the club had increased to its present number, fifty, among them seven women. One of Canada's first, and best, women parachutists is Betty Lou Archibald, a member of the Edmonton Club.

Like all 46 member units of the Parachute Clubs of Canada, the Edmonton club maintains a regular training program during the winter months. This program is standardized throughout Canada, starting in January, with the students making their first jump in April (weather permitting).



There's always a tense moment just before leaving the plane.

Following a thorough medical examination, the student is given careful instruction in reading instruments, particularly altimeter and stop-watch, and in handling and packing his parachute. Chute packing is vitally important to the safety of the jumper. He also learns the theories of parachute jumping, free-fall, chute handling, navigation, and landing.

The first jumps are taken on a static line—a line which is at all times attached to the plane and to the jumper—while the student masters the body positions, and other requirements. The stable body position in parachuting is just like the swan dive in swimming—with arms and legs outstretched. The student must perfect this position and its variations until it becomes automatic, as all manoeuvres depend on a stable body position. An unstable position can contribute to malfunction of equipment, resulting in an accident.

Once the student has mastered the body position, and the techniques of



Partly hidden by the wheel of the plane, Doug McLean assumes stable body position in free fall.

handling his parachute, he is permitted time falls—free of the static line—starting at 5 seconds, then increasing to 8 seconds, then 10 seconds. By the time a jumper has been falling for 10 seconds he has reached terminal velocity which, depending on his position, may be anything from 120 to 180 miles per hour. The body acts as an air foil, with the arms like wings, the legs and feet like rudder and elevators, and the body as a fuselage. And, like an airplane, it can execute spins, rolls, and tumbles. Of course, control is necessary at all times.

When the jumper has advanced to delays of 15 to 20 seconds before opening his chute, he is ready to tackle target heading and tracking. Target heading is spotting a target on the ground, and controlling the direction of your fall so that you land directly on it, or as close as possible. In order to accomplish this it may become necessary to "track". This is the term applied to moving horizontally while in free fall, and it is accomplished by steering the body with the arms and legs.

The ultimate in sky-diving however, is what is known as relative work. This, according to Dr. Ross, is the "real thrill", and consists of such feats as the "baton pass". Two jumpers leave the aircraft one after another, one carrying a baton. By means of body position the first person controls his fall while the second catches up to him—they join hands, and the baton is passed from one to the other—then they separate, open their

chutes, and land as close as possible to one another at a given spot.

A New Year's Eve stunt which is the talk of parachutists all over North America was a version of the baton pass which took place in New York. Promptly at midnight three parachutists exited from their aircraft and, while in free fall, passed a bottle of champagne (unopened) from one to the other until it was time to separate and open their parachutes.

In all relative work the jumpers must maintain a constant and careful check of their altimeters and stop watches, both of which are attached to the front of their harness. Separation must be accomplished at above 4,000 feet, while parachutes must be opened by the time 2,000 feet has been reached.

Usually, there can be only one result from a parachuting accident, and so all parachutists are acutely safety-conscious, and abide by very strict safety regulations laid down by the Parachute Clubs of Canada. Each club has a safety officer who is responsible for checking on each member to see that he is abiding by regulations, and for checking all equipment before each jump. Although there have been very few deaths in parachuting, those which have occurred have been almost all due to breaking of basic safety regulations by the students, and almost never because of equipment failure. Any individual found to be breaking regulations can be grounded for a minimum of 30 days, depending upon the severity of his infraction.

Competition is very keen in sky-diving, and International Competitions are held every two years, in which parachutists from almost every country of the world compete. In 1962 the Canadian team set a world's record in Team Accuracy Jumping. In this event, five men exit from the aircraft one after another at an altitude of 5,600 feet. Following a 20-second free fall, the 'chutes are opened, and they must all land as close as possible to the centre of a 20-foot target laid out on the ground. The average distance of the Canadian team was just 1½ yards from the target point. This year the Canadian team leaves on August 1 to defend their title and try and add a few more laurels at the International Sky-Diving Competitions being held in Germany.

Ask any sky-diver belonging to the Edmonton club what his (or her) main problem is, and you will more than likely be answered "aircraft and equipment". An aircraft and pilot must be hired for every jumping session, and there are not too many small craft available privately. Also, the cost averages out to approximately \$4.00 per jump per person. Obtaining equipment is difficult, also. There is no parachute equipment available in Canada, and everything must be ordered from the United States. Most of this is armed forces surplus, but for the most part unused, having been replaced with new equipment when time-expired. However, duty and transportation charges almost double the cost of the equipment by the time it reaches the purchaser. The bare minimum cost to a student requiring

merely the basic equipment is approximately \$250.00 but more experienced parachutists find their investment running close to \$1,000.

Members of the Edmonton Parachute Club are very much in demand throughout Alberta for exhibition jumping at fairs, and exhibitions, and use the funds thus earned to support their own club as well as to contribute to the expenses of the Canadian team attending the International Competitions.

President of the Parachute Club of Edmonton is Corporal C. (Chuck) Embury, a physical training instructor with the P.P.C.L.I. while Miss Joyce Matthews is secretary and treasurer is Eric Estenberg. Annual membership dues are \$15.00 per year, and the new members pay \$25.00 for their training course.

An interesting side-light to parachuting as a sport is that the American armed services are beginning to adapt the techniques used in sport parachute jumping to their own use, with the result that some parachute units are now able to exit from an aircraft at 20,000 feet, **at night**, and accomplish a pin-point landing on a given target. The utter silence during the free fall period, after the aircraft is well out of hearing, provides complete secrecy of movement without even the rustle of "silk" to reveal the presence of troops. These techniques are being used to deposit guerillas in specific areas, and also frogmen, completely equipped for underwater work, can be dropped into the ocean at a given spot.